

Amendments to the Specification

Please replace the paragraph beginning on page 5, line 14 with the following amended paragraphs:

Figure 1 is a perspective view (exploded) of a conventional hands-free telephone 100 of the prior art. Telephone 100 includes front housing member 110 and back housing member 120, which fit together to enclose all internal components of telephone 100. Front housing 110 is provided with a plurality of openings 112 to receive the keys 113 of keypad 115. Keypad 115 may be composed of separated keys or, as shown in Figure 1, a single pad having a plurality of raised keys. The keys 113 correspond to pressure sensitive contact switches 121 on printed circuit board (PCB) 122. Front housing 110 also features a window 114 through which liquid-crystal display (LCD) 118 is visible when the phone is assembled. LCD 118 provides the user with a visual interface that may show the number being called, the identity of a caller, the presence of a voicemail message, battery-level, signal strength, and the like. The audio interface is provided by speaker element 119, which converts received and processed communications signals into an audio presentation that the user may listen to. Although disposed between front housing 110 and back housing 120 of telephone 100, speaker element 119 is typically heard by the user through speaker ports ~~113~~ 111 provided in front housing 110.

The conventional telephone 100 of Figure 1 is designed with the intention that the user will, in order to listen to a conversation, press the front housing 110 against an ear such that speaker ports ~~113~~ 111 are directed toward the opening of the ear and the outer fleshy portion of the ear circumferentially contacts the housing area surrounding speaker ~~parts~~ ports 111 to create a seal. A seal, in this context, simply means that the soft outer ear is able to make contact with the phone in a way that air does not pass into the closed space created by the ear and the phone once contact is made and until forceably broken. In some cases, a small quantity of air is even forced out past the ear as the phone is pressed against the ear, but not permitted by the ear-phone contact to re-enter, even with minor phone movement occurring. A slight pressure differential is thereby created, strengthening the seal. The effect of this sealing phenomenon is to permit the user to better hear the conversation by, at least to some extent, containing sound from the speaker and preventing the entry of unwanted ambient noise. Admittedly, the aforementioned seal effect and the pressure differential are quite small, as is the force required to break contact, but the

effect nevertheless enhances the user's ability to hear the conversation. Although the speaker volume of telephone 100 is preferably adjustable, its upper limit is set so that acoustic shock will not occur even when the phone is used in the manner described above.

Please replace the paragraph beginning on page 7, line 9 with the following amended paragraph:

Speaker reservoir 129 holds speaker element 119 in place beneath speaker ports ~~113~~ 111 when the telephone 100 is assembled, while permitting the necessary electrical connections 131 to be made. Although not shown in Figure 1, the other components housed between front housing 110 and back housing 120 are secured in place, as necessary, in an analogous fashion. Note that only selected components are illustrated in Figure 1, other components may be present as well.

Please replace the paragraph beginning on page 7, line 15 and ending on page 9, line 4, with the following amended paragraphs:

Figure 2 is a perspective view (exploded) of a hands-free speakerphone 200 according to an embodiment of the present invention. Note that hands-free speakerphone 200 contains many of the same components as telephone 100 of Figure 1, and analogous parts will be numbered correspondingly where applicable. Back housing 220 includes speaker reservoir 229, which receives speaker element 219 when speakerphone 200 is assembled. As will be further described below, it is preferred that speaker element 219, which produces the audio output of hands-free speakerphone 200 be held substantially fixed in a definite orientation with respect to back housing 220. Speakerphone 200 will typically include a PCB having a plurality of contacts corresponding to the keys 213 of keypad 215, a battery or external power source, an external power source port, and a microphone, similar to telephone 100 (shown in Figure 1), although these components are not shown in Figure 2 for clarity.

Alternately, however, speakerphone ~~200~~ includes only selected ones of these components, for example an external microphone may be provided (or not included at all), and there may be no keys or LCD. The greatest advantage of the invention, however, will obtain in devices that are substantially so equipped specifically because they resemble a standard personal phone. ("Personal" being used here in the sense on a telephone that is in use held to the ear of a single user.) For illustration, note that speakerphone 200 of Figure 2, at first glance, somewhat resembles the telephone 100 of Figure 1. While drawn as such for purposes of illustration, in reality the wide variation currently found in telephone design increases the likelihood that speakerphone 200 would be mistaken for a telephone even where such identity of appearance does not occur.

In other words, there are so many different designs in use today for wireline telephones, speakerphones, mobile phones, media phones, and personal digital assistants (PDAs) with calling capability that the various instruments used for different purposes retain any distinctive appearance related to that purpose. A popular design may be copied for different types of telephone instruments. Speakerphones certainly do not require the bulky size of such instruments of years past. As a result, the risk has increased that a user unfamiliar with a given device, or perhaps one acting absent-mindedly, will pick up a hands-free speakerphone and position it against an ear as if it were simply an ordinary telephone.

As mentioned above, however, speakerphone 200 must provide sound at a much greater volume in order to be practicably useful. Speakerphone 200 is meant to be heard and understood at a distance of perhaps several meters. The user who mistakes speakerphone 200 for a hand-held telephone may result in permanent injury, almost certainly will cause irritation, and in some cases, puts the manufacturer of the speakerphone at risk of liability for damages. The features of the present invention, however, contribute to an acoustically safe speakerphone design notwithstanding its similarity in appearance to a telephone, thereby preserving the freedom to make instruments that are aesthetically pleasing, and that will not result in harm to unsuspecting users.

Please amend the paragraph on page 12, lines 1-14, with the following amended paragraph:

Enhancing the benefit of the spatially distributed speaker ports is the curved edge 270 created as front housing 210 and back housing 220 are brought together, and along which speaker ports 275a-e are preferably disposed. As shown in Figure 3, the radius of this curve is preferably large enough to ensure that a typical user's ear cannot be sealed over all of the speaker parts at once. Note, however, that the curved edge 270 need not be semicircular and may assume any curved shape that promotes the anti-sealing effect. As can be seen in Figure 3, in the assembled hands-free speakerphone 200, keys 213 are operatively positioned in opening 212 so that they may be used to enter a called number or other input. LCD 218 is likewise secured in position so that it may be viewed through window 214. ~~Note that in this embodiment, LCD 218 is held in a sloped orientation with respect to face 202 by lateral extension 280 and sloped extension 282, both of which are integrally formed with top housing 210. (A second sloped extension is disposed from the side of window 214 that opposes sloped extension, but is not shown in this view.)~~ The advantage of this configuration is explained below in reference to Figure 6.

Please replace the paragraph on page 13, lines 9-19, with the following amended paragraph:

Figure 6 is a sectional view of telephone 200 taken along section line B-B shown in Figure 3. ~~The sloped orientation of LCD 218 with respect to face 202 of top housing 210 may now be clearly seen.~~ As mentioned previously, LCD 218 is secured in place by lateral extension 280 and sloped extension 282. In this embodiment, LCD 218 is disposed above speaker element 219, which itself is ~~now~~ positioned inside speaker reservoir 229. Note that this configuration is exemplary and not limiting. ~~The sound from speaker element 219, when produced, is therefore reflected generally in the direction of speaker port 275e (and the other speaker ports, now shown in Figure 6). This configuration, while not a requirement of the present invention, nevertheless may be used to enhance the sound quality of speakerphone 200. Alternately, LCD 218 may be disposed in a more conventional configuration and an additional acoustical element or elements (not shown) may be used to redirect the sound from speaker element 219.~~